SEQUENCE LISTING

<110> Sheppard, Paul O.
Jelinek, Laura J.

<120> Mammalian Neuro-Growth Factor Like Protein

<130> 97-28C1

<150> 09/099,295
<151> 1998-06-18

<150> 60/050,143
<151> 1997-06-18

<160> 24

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1297
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (69)...(887)

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cacaggcc atg agg ggc tct cag gag gtg ctg ctg atg tgg ctt ctg gtg 110
Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val
1 5 10

ttg gca gtg ggc ggc aca gag cac gcc tac cgg ccc ggc cgt agg gtg 158
Leu Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val
15 20 25 30

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tgt gct gtc cgg gct cac ggg gat cct gtc tcc gag tcg ttc gtg cag   206
Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln
                35                  40                  45

cgt gtg tac cag ccc ttc ctc acc acc tgc gac ggg cac cgg gcc tgc   254
Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys
            50                  55                  60

agc acc tac cga acc atc tat agg acc gcc tac cgc cgc agc cct ggg   302
Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly
        65                  70                  75

ctg gcc cct gcc agg cct cgc tac gcg tgc tgc ccc ggc tgg aag agg   350
Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg
    80                  85                  90

acc agc ggg ctt cct ggg gcc tgt gga gca gca ata tgc cag ccg cca   398
Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro
95                  100                 105                 110

tgc cgg aac gga ggg agc tgt gtc cag cct ggc cgc tgc cgc tgc cct   446
Cys Arg Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro
                115                 120                 125

gca gga tgg cgg ggt gac act tgc cag tca gat gtg gat gaa tgc agt   494
Ala Gly Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser
            130                 135                 140

gct agg agg ggc ggc tgt ccc cag cgc tgc gtc aac acc gcc ggc agt   542
Ala Arg Arg Gly Gly Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser
        145                 150                 155

tac tgg tgc cag tgt tgg gag ggg cac agc ctg tct gca gac ggt aca   590
Tyr Trp Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr
    160                 165                 170

ctc tgt gtg ccc aag gga ggg ccc ccc agg gtg gcc ccc aac ccg aca   638
Leu Cys Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr
175                 180                 185                 190
```

gga gtg gac agt gca atg aag gaa gaa gtg cag agg ctg cag tcc agg 686
Gly Val Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg
195 200 205

gtg gac ctg ctg gag gag aag ctg cag ctg gtg ctg gcc cca ctg cac 734
Val Asp Leu Leu Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His
210 215 220

agc ctg gcc tcg cag gca ctg gag cat ggg ctc ccg gac ccc ggc agc 782
Ser Leu Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser
225 230 235

ctc ctg gtg cac tcc ttc cag cag ctc ggc cgc atc gac tcc ctg agc 830
Leu Leu Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser
240 245 250

gag cag att tcc ttc ctg gag gag cag ctg ggg tcc tgc tcc tgc aag 878
Glu Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys
255 260 265 270

aaa gac tcg tgactgccca gcgccccagg ctggactgag cccctcacgc 927
Lys Asp Ser

cgccctgcag cccccatgcc cctgcccaac atgctggggg tccagaagcc acctcggggt 987
gactgagcgg aaggccaggc agggccttcc tcctcttcct cctccccttc ctcaggaggc 1047
tccccagacc ctggcatggg atgggctggg atcttctctg tgaatccacc cctggctacc 1107
cccaccctgg ctaccccaac ggcatcccaa ggccaggtgg gccctcagct gagggaaggt 1167
acgagctccc tgctggagcc tgggacccat ggcacaggcc aggcagcccg gaggctgggt 1227
ggggcctcag tgggggctgc tgcctgaccc ccagcacaat aaaaatgaaa cgtgaaaaaa 1287
aaaaaaaaaa 1297

<210> 2
<211> 273
<212> PRT
<213> Homo sapiens

<400> 2
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1 5 10 15

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            20                  25                  30
Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val
        35                  40                  45
Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr
    50                  55                  60
Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala
65                  70                  75                  80
Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser
                85                  90                  95
Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg
            100                 105                 110
Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly
        115                 120                 125
Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg
    130                 135                 140
Arg Gly Gly Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp
145                 150                 155                 160
Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys
                165                 170                 175
Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val
            180                 185                 190
Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp
        195                 200                 205
Leu Leu Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu
    210                 215                 220
Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu
225                 230                 235                 240
Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu Gln
                245                 250                 255
Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp
            260                 265                 270
Ser
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<210> 3
<211> 254
<212> PRT
<213> Homo sapiens

<400> 3

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Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala Val Arg Ala
 1               5                  10                  15
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His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro
            20                  25                  30
Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr
        35                  40                  45
Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg
    50                  55                  60
Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro
65                  70                  75                  80
Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly
                85                  90                  95
Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly
            100                 105                 110
Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly
        115                 120                 125
Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys
    130                 135                 140
Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys
145                 150                 155                 160
Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala
                165                 170                 175
Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu Glu
            180                 185                 190
Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala Ser Gln
        195                 200                 205
Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu Val His Ser
    210                 215                 220
Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu Gln Ile Ser Phe
225                 230                 235                 240
Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp Ser
                245                 250
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<210> 4
<211> 284
<212> DNA
<213> Homo sapiens

<400> 4
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tggaggcaca ggccatgagg ggctctcagg aggtgctgct gatgtggctt ctggtgttgg 120
cagtgggcgg cacagagcac gcctaccggc ccggccgtag ggtgtgtgct gtccgggctc 180

acggggaccc tgtctccgag tcgttcgtgc agcgtgtgta ccagcccttc ctcaccacct 240
gcgacgggca ccgggcctgc agcacctacc gaaccatcta tagg 284

<210> 5
<211> 40
<212> DNA
<213> Homo sapiens

<400> 5
tgcggcggta ggcggtccta tagatggttc ggtaggtgct 40

<210> 6
<211> 18
<212> DNA
<213> Homo sapiens

<400> 6
gctgatgtgg cttctggt 18

<210> 7
<211> 18
<212> DNA
<213> Homo sapiens

<400> 7
ggtaggcgtg ctctgtgc 18

<210> 8
<211> 708
<212> PRT
<213> Homo sapiens

<400> 8
Thr His Arg Gly Leu His Ile Ser Ala Leu Ala Thr Tyr Arg Ala Arg
1 5 10 15
Gly Pro Arg Gly Leu Tyr Ala Arg Gly Ala Arg Gly Val Ala Leu Cys
20 25 30

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Tyr Ser Ala Leu Ala Val Ala Leu Ala Arg Gly Ala Leu Ala His Ile
        35                  40                  45
Ser Gly Leu Tyr Ala Ser Pro Pro Arg Val Ala Leu Ser Glu Arg Gly
    50                  55                  60
Leu Ser Glu Arg Pro His Glu Val Ala Leu Gly Leu Asn Ala Arg Gly
65                  70                  75                  80
Val Ala Leu Thr Tyr Arg Gly Leu Asn Pro Arg Pro His Glu Leu Glu
                85                  90                  95
Thr His Arg Thr His Arg Cys Tyr Ser Ala Ser Pro Gly Leu Tyr His
            100                 105                 110
Ile Ser Ala Arg Gly Ala Leu Ala Cys Tyr Ser Ser Glu Arg Thr His
        115                 120                 125
Arg Thr Tyr Arg Ala Arg Gly Thr His Arg Ile Leu Glu Thr Tyr Arg
    130                 135                 140
Ala Arg Gly Thr His Arg Ala Leu Ala Thr Tyr Arg Ala Arg Gly Ala
145                 150                 155                 160
Arg Gly Ser Glu Arg Pro Arg Gly Leu Tyr Leu Glu Ala Leu Ala Pro
                165                 170                 175
Arg Ala Leu Ala Ala Arg Gly Pro Arg Ala Arg Gly Thr Tyr Arg Ala
            180                 185                 190
Leu Ala Cys Tyr Ser Cys Tyr Ser Pro Arg Gly Leu Tyr Thr Arg Pro
        195                 200                 205
Leu Tyr Ser Ala Arg Gly Thr His Arg Ser Glu Arg Gly Leu Tyr Leu
    210                 215                 220
Glu Pro Arg Gly Leu Tyr Ala Leu Ala Cys Tyr Ser Gly Leu Tyr Ala
225                 230                 235                 240
Leu Ala Ala Leu Ala Ile Leu Glu Cys Tyr Ser Gly Leu Asn Pro Arg
                245                 250                 255
Pro Arg Cys Tyr Ser Ala Arg Gly Ala Ser Asn Gly Leu Tyr Gly Leu
            260                 265                 270
Tyr Ser Glu Arg Cys Tyr Ser Val Ala Leu Gly Leu Asn Pro Arg Gly
        275                 280                 285
Leu Tyr Ala Arg Gly Cys Tyr Ser Ala Arg Gly Cys Tyr Ser Pro Arg
    290                 295                 300
Ala Leu Ala Gly Leu Tyr Thr Arg Pro Ala Arg Gly Gly Leu Tyr Ala
305                 310                 315                 320
Ser Pro Thr His Arg Cys Tyr Ser Gly Leu Asn Ser Glu Arg Ala Ser
                325                 330                 335
Pro Val Ala Leu Ala Ser Pro Gly Leu Cys Tyr Ser Ser Glu Arg Ala
            340                 345                 350
```

```
Leu Ala Ala Arg Gly Ala Arg Gly Gly Leu Tyr Gly Leu Tyr Cys Tyr
        355                 360                 365
Ser Pro Arg Gly Leu Asn Ala Arg Gly Cys Tyr Ser Val Ala Leu Ala
    370                 375                 380
Ser Asn Thr His Arg Ala Leu Ala Gly Leu Tyr Ser Glu Arg Thr Tyr
385                 390                 395                 400
Arg Thr Arg Pro Cys Tyr Ser Gly Leu Asn Cys Tyr Ser Thr Arg Pro
                405                 410                 415
Gly Leu Gly Leu Tyr His Ile Ser Ser Glu Arg Leu Glu Ser Glu Arg
            420                 425                 430
Ala Leu Ala Ala Ser Pro Gly Leu Tyr Thr His Arg Leu Glu Cys Tyr
        435                 440                 445
Ser Val Ala Leu Pro Arg Leu Tyr Ser Gly Leu Tyr Gly Leu Tyr Pro
    450                 455                 460
Arg Pro Arg Ala Arg Gly Val Ala Leu Ala Leu Ala Pro Arg Ala Ser
465                 470                 475                 480
Asn Pro Arg Thr His Arg Gly Leu Tyr Val Ala Leu Ala Ser Pro Ser
                485                 490                 495
Glu Arg Ala Leu Ala Met Glu Thr Leu Tyr Ser Gly Leu Gly Leu Val
            500                 505                 510
Ala Leu Gly Leu Asn Ala Arg Gly Leu Glu Gly Leu Asn Ser Glu Arg
        515                 520                 525
Ala Arg Gly Val Ala Leu Ala Ser Pro Leu Glu Leu Glu Gly Leu Gly
    530                 535                 540
Leu Leu Tyr Ser Leu Glu Gly Leu Asn Leu Glu Val Ala Leu Leu Glu
545                 550                 555                 560
Ala Leu Ala Pro Arg Leu Glu His Ile Ser Ser Glu Arg Leu Glu Ala
                565                 570                 575
Leu Ala Ser Glu Arg Gly Leu Asn Ala Leu Ala Leu Glu Gly Leu His
            580                 585                 590
Ile Ser Gly Leu Tyr Leu Glu Pro Arg Ala Ser Pro Pro Arg Gly Leu
        595                 600                 605
Tyr Ser Glu Arg Leu Glu Leu Glu Val Ala Leu His Ile Ser Ser Glu
    610                 615                 620
Arg Pro His Glu Gly Leu Asn Gly Leu Asn Leu Glu Gly Leu Tyr Ala
625                 630                 635                 640
Arg Gly Ile Leu Glu Ala Ser Pro Ser Glu Arg Leu Glu Ser Glu Arg
                645                 650                 655
Gly Leu Gly Leu Asn Ile Leu Glu Ser Glu Arg Pro His Glu Leu Glu
            660                 665                 670
```

Gly Leu Gly Leu Gly Leu Asn Leu Glu Gly Leu Tyr Ser Glu Arg Cys
675 680 685
Tyr Ser Ser Glu Arg Cys Tyr Ser Leu Tyr Ser Leu Tyr Ser Ala Ser
690 695 700
Pro Ser Glu Arg
705

<210> 9
<211> 31
<212> PRT
<213> Homo sapiens

<400> 9
Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
1 5 10 15
Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln
20 25 30

<210> 10
<211> 42
<212> PRT
<213> Homo sapiens

<400> 10
Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln Arg
1 5 10 15
Cys Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu Gly His
20 25 30
Ser Leu Ser Ala Asp Gly Thr Leu Cys Val
35 40

<210> 11
<211> 256
<212> PRT
<213> Homo sapiens

<400> 11
Pro Arg Leu Tyr Ser Gly Leu Tyr Gly Leu Tyr Pro Arg Pro Arg Ala
1 5 10 15
Arg Gly Val Ala Leu Ala Leu Ala Pro Arg Ala Ser Asn Pro Arg Thr
20 25 30

```
His Arg Gly Leu Tyr Val Ala Leu Ala Ser Pro Ser Glu Arg Ala Leu
        35                  40                  45
Ala Met Glu Thr Leu Tyr Ser Gly Leu Gly Leu Val Ala Leu Gly Leu
    50                  55                  60
Asn Ala Arg Gly Leu Glu Gly Leu Asn Ser Glu Arg Ala Arg Gly Val
65                  70                  75                  80
Ala Leu Ala Ser Pro Leu Glu Leu Glu Gly Leu Gly Leu Leu Tyr Ser
                85                  90                  95
Leu Glu Gly Leu Asn Leu Glu Val Ala Leu Leu Glu Ala Leu Ala Pro
            100                 105                 110
Arg Leu Glu His Ile Ser Ser Glu Arg Leu Glu Ala Leu Ala Ser Glu
        115                 120                 125
Arg Gly Leu Asn Ala Leu Ala Leu Glu Gly Leu His Ile Ser Gly Leu
    130                 135                 140
Tyr Leu Glu Pro Arg Ala Ser Pro Pro Arg Gly Leu Tyr Ser Glu Arg
145                 150                 155                 160
Leu Glu Leu Glu Val Ala Leu His Ile Ser Ser Glu Arg Pro His Glu
                165                 170                 175
Gly Leu Asn Gly Leu Asn Leu Glu Gly Leu Tyr Ala Arg Gly Ile Leu
            180                 185                 190
Glu Ala Ser Pro Ser Glu Arg Leu Glu Ser Glu Arg Gly Leu Gly Leu
        195                 200                 205
Asn Ile Leu Glu Ser Glu Arg Pro His Glu Leu Glu Gly Leu Gly Leu
    210                 215                 220
Gly Leu Asn Leu Glu Gly Leu Tyr Ser Glu Arg Cys Tyr Ser Ser Glu
225                 230                 235                 240
Arg Cys Tyr Ser Leu Tyr Ser Leu Tyr Ser Ala Ser Pro Ser Glu Arg
                245                 250                 255
```

<210> 12
<211> 331
<212> PRT
<213> Homo sapiens

<400> 12

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Thr His Arg Gly Leu His Ile Ser Ala Leu Ala Thr Tyr Arg Ala Arg
 1               5                  10                  15
Gly Pro Arg Gly Leu Tyr Ala Arg Gly Ala Arg Gly Val Ala Leu Cys
            20                  25                  30
Tyr Ser Ala Leu Ala Val Ala Leu Ala Arg Gly Ala Leu Ala His Ile
        35                  40                  45
```

```
Ser Gly Leu Tyr Ala Ser Pro Pro Arg Val Ala Leu Ser Glu Arg Gly
    50                  55                  60
Leu Ser Glu Arg Pro His Glu Val Ala Leu Gly Leu Asn Ala Arg Gly
65                  70                  75                  80
Val Ala Leu Thr Tyr Arg Gly Leu Asn Pro Arg Pro His Glu Leu Glu
                85                  90                  95
Thr His Arg Thr His Arg Cys Tyr Ser Ala Ser Pro Gly Leu Tyr His
            100                 105                 110
Ile Ser Ala Arg Gly Ala Leu Ala Cys Tyr Ser Ser Glu Arg Thr His
        115                 120                 125
Arg Thr Tyr Arg Ala Arg Gly Thr His Arg Ile Leu Glu Thr Tyr Arg
    130                 135                 140
Ala Arg Gly Thr His Arg Ala Leu Ala Thr Tyr Arg Ala Arg Gly Ala
145                 150                 155                 160
Arg Gly Ser Glu Arg Pro Arg Gly Leu Tyr Leu Glu Ala Leu Ala Pro
                165                 170                 175
Arg Ala Leu Ala Ala Arg Gly Pro Arg Ala Arg Gly Thr Tyr Arg Ala
            180                 185                 190
Leu Ala Cys Tyr Ser Cys Tyr Ser Pro Arg Gly Leu Tyr Thr Arg Pro
        195                 200                 205
Leu Tyr Ser Ala Arg Gly Thr His Arg Ser Glu Arg Gly Leu Tyr Leu
    210                 215                 220
Glu Pro Arg Gly Leu Tyr Ala Leu Ala Cys Tyr Ser Gly Leu Tyr Ala
225                 230                 235                 240
Leu Ala Ala Leu Ala Ile Leu Glu Cys Tyr Ser Gly Leu Asn Pro Arg
                245                 250                 255
Pro Arg Cys Tyr Ser Ala Arg Gly Ala Ser Asn Gly Leu Tyr Gly Leu
            260                 265                 270
Tyr Ser Glu Arg Cys Tyr Ser Val Ala Leu Gly Leu Asn Pro Arg Gly
        275                 280                 285
Leu Tyr Ala Arg Gly Cys Tyr Ser Ala Arg Gly Cys Tyr Ser Pro Arg
    290                 295                 300
Ala Leu Ala Gly Leu Tyr Thr Arg Pro Ala Arg Gly Gly Leu Tyr Ala
305                 310                 315                 320
Ser Pro Thr His Arg Cys Tyr Ser Gly Leu Asn
                325                 330
```

<210> 13
<211> 158
<212> PRT
<213> Homo sapiens

<400> 13
Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala Val Arg Ala
1 5 10 15
His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro
20 25 30
Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr
35 40 45
Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg
50 55 60
Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro
65 70 75 80
Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly
85 90 95
Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly
100 105 110
Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly
115 120 125
Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys
130 135 140
Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val
145 150 155

<210> 14
<211> 73
<212> PRT
<213> Homo sapiens

<400> 14
Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
1 5 10 15
Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln Ser
20 25 30
Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln Arg Cys
35 40 45
Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu Gly His Ser
50 55 60
Leu Ser Ala Asp Gly Thr Leu Cys Val
65 70

<210> 15
<211> 169

<212> PRT
<213> Homo sapiens

<400> 15
Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
1 5 10 15
Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln Ser
20 25 30
Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln Arg Cys
35 40 45
Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu Gly His Ser
50 55 60
Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly Gly Pro Pro Arg
65 70 75 80
Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala Met Lys Glu Glu Val
85 90 95
Gln Arg Leu Gln Ser Arg Val Asp Leu Leu Glu Glu Lys Leu Gln Leu
100 105 110
Val Leu Ala Pro Leu His Ser Leu Ala Ser Gln Ala Leu Glu His Gly
115 120 125
Leu Pro Asp Pro Gly Ser Leu Leu Val His Ser Phe Gln Gln Leu Gly
130 135 140
Arg Ile Asp Ser Leu Ser Glu Gln Ile Ser Phe Leu Glu Glu Gln Leu
145 150 155 160
Gly Ser Cys Ser Cys Lys Lys Asp Ser
165

<210> 16
<211> 181
<212> PRT
<213> Homo sapiens

<400> 16
Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala Val Arg Ala
1 5 10 15
His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro
20 25 30
Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr
35 40 45
Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg
50 55 60

```
Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro
65                  70                  75                  80
Gly Ala Cys Gly Ala Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn
                85                  90                  95
Pro Thr Gly Val Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln
            100                 105                 110
Ser Arg Val Asp Leu Leu Glu Glu Lys Leu Gln Leu Val Leu Ala Pro
        115                 120                 125
Leu His Ser Leu Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro
    130                 135                 140
Gly Ser Leu Leu Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser
145                 150                 155                 160
Leu Ser Glu Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser
                165                 170                 175
Cys Lys Lys Asp Ser
            180
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<210> 17
<211> 293
<212> PRT
<213> Homo sapiens

<400> 17

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Met Gly Ser Arg Ala Glu Leu Cys Thr Leu Leu Gly Gly Phe Ser Phe
 1               5                  10                  15
Leu Leu Leu Leu Ile Pro Gly Glu Gly Ala Lys Gly Gly Ser Leu Arg
            20                  25                  30
Glu Ser Gln Gly Val Cys Ser Lys Gln Thr Leu Val Val Pro Leu His
        35                  40                  45
Tyr Asn Glu Ser Tyr Ser Gln Pro Val Tyr Lys Pro Tyr Leu Thr Leu
    50                  55                  60
Cys Ala Gly Arg Arg Ile Cys Ser Thr Tyr Arg Thr Met Tyr Arg Val
65                  70                  75                  80
Met Trp Arg Glu Val Arg Arg Glu Val Gln Gln Thr His Ala Val Cys
                85                  90                  95
Cys Gln Gly Trp Lys Lys Arg His Pro Gly Ala Leu Thr Cys Glu Ala
            100                 105                 110
Ile Cys Ala Lys Pro Cys Leu Asn Gly Gly Val Cys Val Arg Pro Asp
        115                 120                 125
Gln Cys Glu Cys Ala Pro Gly Trp Gly Gly Lys His Cys His Val Asp
    130                 135                 140
```

```
Val Asp Glu Cys Arg Thr Ser Ile Thr Leu Cys Ser His His Cys Phe
145                 150                 155                 160
Asn Thr Ala Gly Ser Phe Thr Cys Gly Cys Pro His Asp Leu Val Leu
                165                 170                 175
Gly Val Asp Gly Arg Thr Cys Met Glu Gly Ser Pro Glu Pro Pro Thr
            180                 185                 190
Ser Ala Ser Ile Leu Ser Val Ala Val Arg Glu Ala Glu Lys Asp Glu
        195                 200                 205
Arg Ala Leu Lys Gln Glu Ile His Glu Leu Arg Gly Arg Leu Glu Arg
    210                 215                 220
Leu Glu Gln Trp Ala Gly Gln Ala Gly Ala Trp Val Arg Ala Val Leu
225                 230                 235                 240
Pro Val Pro Pro Glu Glu Leu Gln Pro Glu Gln Val Ala Glu Leu Trp
                245                 250                 255
Gly Arg Gly Asp Arg Ile Glu Ser Leu Ser Asp Gln Val Leu Leu Leu
            260                 265                 270
Glu Glu Arg Leu Gly Ala Cys Ser Cys Glu Asp Asn Ser Leu Gly Leu
        275                 280                 285
Gly Val Asn His Arg
    290
```

<210> 18
<211> 1339
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (261)...(1094)

<400> 18

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gtagggctct gccgggacct gggtcttccc tctcctggag ctgcagaggc cagaagttca  60
gtggtgaggg gtccaaggag agtccgggga gaccagggag gctctgtcca tcccctgtcc 120
ctgtccctgt gggaagcccc cggcagcagc aagacgctgg ctgttccacc tgcccacaag 180
aacagccacc accagtaccc aggggatgac aagcggccgg accacaggcc acaaaaagaa 240
gaaggctacc ccacttacag atg cag acc atg tgg ggc tcc gga gaa ctg ctt 293
                        Met Gln Thr Met Trp Gly Ser Gly Glu Leu Leu
                         1               5                  10
```

gta gca tgg ttt cta gtg ttg gca gca gat ggt act act gag cat gtc 341
Val Ala Trp Phe Leu Val Leu Ala Ala Asp Gly Thr Thr Glu His Val
15 20 25

tac aga ccc agc cgt aga gtg tgt act gtg ggg att tcc gga ggt tcc 389
Tyr Arg Pro Ser Arg Arg Val Cys Thr Val Gly Ile Ser Gly Gly Ser
30 35 40

atc tcg gag acc ttt gtg cag cgt gta tac cag cct tac ctc acc act 437
Ile Ser Glu Thr Phe Val Gln Arg Val Tyr Gln Pro Tyr Leu Thr Thr
45 50 55

tgc gac gga cac aga gcc tgc agc acc tac cga acc atc tac cgg act 485
Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr
60 65 70 75

gcc tat cgc cgt agc cct ggg gtg act ccc gca agg cct cgc tat gct 533
Ala Tyr Arg Arg Ser Pro Gly Val Thr Pro Ala Arg Pro Arg Tyr Ala
80 85 90

tgc tgc cct ggt tgg aag agg acc agt ggg ctc cct ggg gct tgt gga 581
Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly
95 100 105

gca gca ata tgc cag cct cca tgt ggg aat gga ggg agt tgc atc cgc 629
Ala Ala Ile Cys Gln Pro Pro Cys Gly Asn Gly Gly Ser Cys Ile Arg
110 115 120

cca gga cac tgc cgc tgc cct gtg gga tgg cag gga gat act tgc cag 677
Pro Gly His Cys Arg Cys Pro Val Gly Trp Gln Gly Asp Thr Cys Gln
125 130 135

aca gat gtt gat gaa tgc agt aca gga gag gcc agt tgt ccc cag cgc 725
Thr Asp Val Asp Glu Cys Ser Thr Gly Glu Ala Ser Cys Pro Gln Arg
140 145 150 155

tgt gtc aat act gtg gga agt tac tgg tgc cag gga tgg gag gga caa 773
Cys Val Asn Thr Val Gly Ser Tyr Trp Cys Gln Gly Trp Glu Gly Gln
160 165 170

agc cca tct gca gat ggg acg cgc tgc ctg tct aag gag ggg ccc tcc 821
Ser Pro Ser Ala Asp Gly Thr Arg Cys Leu Ser Lys Glu Gly Pro Ser
175 180 185

ccg gtg gcc cca aac ccc aca gca gga gtg gac agc atg gcg aga gag 869
Pro Val Ala Pro Asn Pro Thr Ala Gly Val Asp Ser Met Ala Arg Glu
190 195 200

gag gtg tac agg ctg cag gct cgg gtt gat gtg cta gaa cag aaa ctg 917
Glu Val Tyr Arg Leu Gln Ala Arg Val Asp Val Leu Glu Gln Lys Leu
205 210 215

cag ttg gtg ctg gcc cca ctg cac agc ctg gcc tct cgg tcc aca gag 965
Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala Ser Arg Ser Thr Glu
220 225 230 235

cat ggg cta caa gat cct ggc agc ctg ctg gcc cat tcc ttc cag cag 1013
His Gly Leu Gln Asp Pro Gly Ser Leu Leu Ala His Ser Phe Gln Gln
240 245 250

ctg gac cga att gat tca ctg agt gag cag gtg tcc ttc ttg gag gaa 1061
Leu Asp Arg Ile Asp Ser Leu Ser Glu Gln Val Ser Phe Leu Glu Glu
255 260 265

cat ctg ggg tcc tgc tcc tgc aaa aaa gat ctg tgataacctc tcaccaccca 1114
His Leu Gly Ser Cys Ser Cys Lys Lys Asp Leu
270 275

ggctggatag agcagtcatc cctagatccc ttgtagccag agttcaggcg ctgtctggtg 1174
gtgcctatga gcagaaggcc ctgcctcatt gtccctcttt cttaggaggt tcctaggact 1234
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<212> PRT
<213> Mus musculus

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1 5 10 15

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Arg Val Cys Thr Val Gly Ile Ser Gly Gly Ser Ile Ser Glu Thr Phe
        35                  40                  45
Val Gln Arg Val Tyr Gln Pro Tyr Leu Thr Thr Cys Asp Gly His Arg
    50                  55                  60
Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser
65                  70                  75                  80
Pro Gly Val Thr Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp
                85                  90                  95
Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln
            100                 105                 110
Pro Pro Cys Gly Asn Gly Gly Ser Cys Ile Arg Pro Gly His Cys Arg
        115                 120                 125
Cys Pro Val Gly Trp Gln Gly Asp Thr Cys Gln Thr Asp Val Asp Glu
    130                 135                 140
Cys Ser Thr Gly Glu Ala Ser Cys Pro Gln Arg Cys Val Asn Thr Val
145                 150                 155                 160
Gly Ser Tyr Trp Cys Gln Gly Trp Glu Gly Gln Ser Pro Ser Ala Asp
                165                 170                 175
Gly Thr Arg Cys Leu Ser Lys Glu Gly Pro Ser Pro Val Ala Pro Asn
            180                 185                 190
Pro Thr Ala Gly Val Asp Ser Met Ala Arg Glu Glu Val Tyr Arg Leu
        195                 200                 205
Gln Ala Arg Val Asp Val Leu Glu Gln Lys Leu Gln Leu Val Leu Ala
    210                 215                 220
Pro Leu His Ser Leu Ala Ser Arg Ser Thr Glu His Gly Leu Gln Asp
225                 230                 235                 240
Pro Gly Ser Leu Leu Ala His Ser Phe Gln Gln Leu Asp Arg Ile Asp
                245                 250                 255
Ser Leu Ser Glu Gln Val Ser Phe Leu Glu Glu His Leu Gly Ser Cys
            260                 265                 270
Ser Cys Lys Lys Asp Leu
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<400> 20
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Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg
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<211> 32
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Gln Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln
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<210> 22
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<213> Mus musculus

<400> 22
Cys Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly
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Val Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val
20 25 30
Asp Leu Leu Glu Glu
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<210> 23
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<212> PRT
<213> Mus musculus

<400> 23
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Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp Ser
20 25

<210> 24
<211> 255
<212> PRT
<213> Homo sapiens

<400> 24

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Ser Gly Gly Ser Ile Ser Glu Thr Phe Val Gln Arg Val Tyr Gln Pro
            20                  25                  30
Tyr Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr
        35                  40                  45
Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Val Thr Pro Ala Arg
    50                  55                  60
Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro
65                  70                  75                  80
Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Gly Asn Gly Gly
                85                  90                  95
Ser Cys Ile Arg Pro Gly His Cys Arg Cys Pro Val Gly Trp Gln Gly
            100                 105                 110
Asp Thr Cys Gln Thr Asp Val Asp Glu Cys Ser Thr Gly Glu Ala Ser
        115                 120                 125
Cys Pro Gln Arg Cys Val Asn Thr Val Gly Ser Tyr Trp Cys Gln Gly
    130                 135                 140
Trp Glu Gly Gln Ser Pro Ser Ala Asp Gly Thr Arg Cys Leu Ser Lys
145                 150                 155                 160
Glu Gly Pro Ser Pro Val Ala Pro Asn Pro Thr Ala Gly Val Asp Ser
                165                 170                 175
Met Ala Arg Glu Glu Val Tyr Arg Leu Gln Ala Arg Val Asp Val Leu
            180                 185                 190
Glu Gln Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala Ser
        195                 200                 205
Arg Ser Thr Glu His Gly Leu Gln Asp Pro Gly Ser Leu Leu Ala His
    210                 215                 220
Ser Phe Gln Gln Leu Asp Arg Ile Asp Ser Leu Ser Glu Gln Val Ser
225                 230                 235                 240
Phe Leu Glu Glu His Leu Gly Ser Cys Ser Cys Lys Lys Asp Leu
                245                 250                 255
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